



# RF

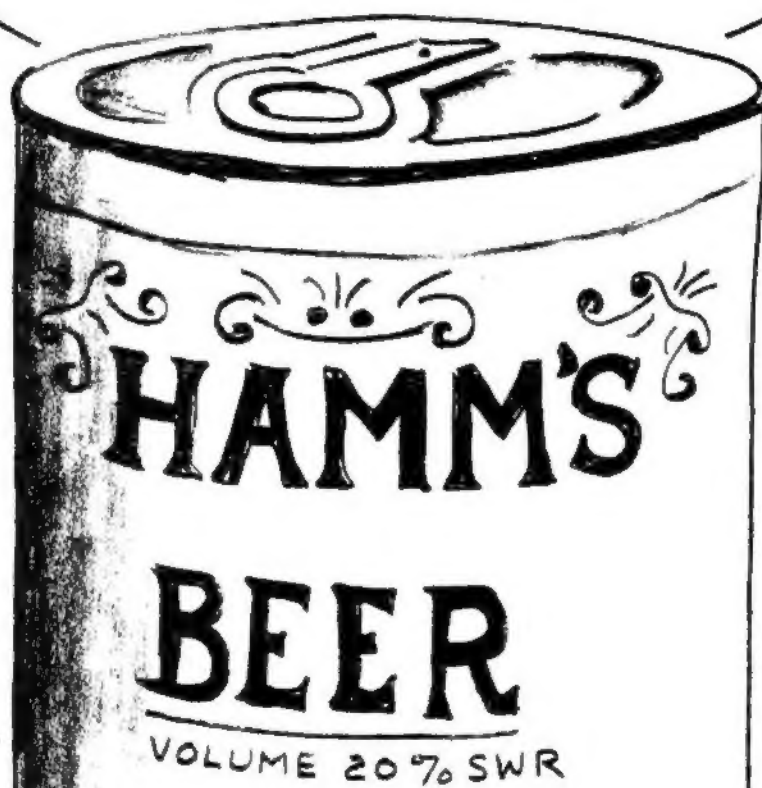


ORANGE COUNTY AMATEUR RADIO CLUB

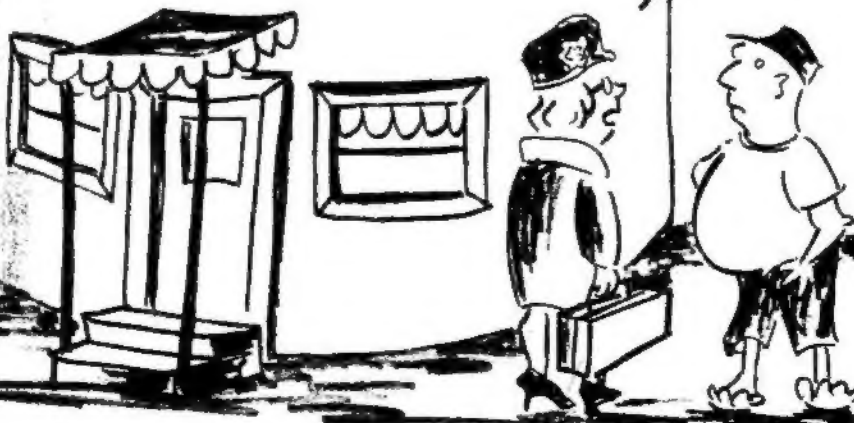
P.O. BOX 95, ORANGE, CALIF. 92668

VOLUME X NO. 7

JULY 1969



IT'S EITHER ME  
OR THAT VERTICAL



PRES: JERRY, WA6ROF	MEMBERS AT LARGE:	ACTIVITIES: JOHN, W6BNX
V. PRES: DAVE, WB6RVM	DAVE, W6COJ	PUB. REL.: KEN, W6HHC
SECY: FRANK, WB6TBU	JACK, WB6UDC	MEMBERSHIP: BILL, WB6WOO
TREAS: BILL, WB6CQR	TEEN REPRESENTATIVE: DAVE, WB6NRK	TVI: DAVE, W6GPR

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## THE PREZ SEZ

Well, Field Day is over and we can put the emergency gear away 'til next year, (or at least until a future need for emergency communications.) All-in-all, I would say our FD venture was quite a success, even though we had less membership participation than last year. At times it was a strain to keep all four rigs manned, but those that turned out did a superb job and are to be commended for virtually a trouble-free exercise. Those that didn't participate really missed something for our new site was ideal.

Our Social Committee Chairman, Ron Cade, WA6FTT, has arranged for a club visit to the Atomic Energy Commission building followed by some fun at Doheny Beach. This is to be a family affair - the XYL and kids will love it - and anyone else you want to bring. The venture was voted on at our June meeting and the date set for Sunday, August 10th. Mark that date on your calendar now! Let's all get together for a real clambake. Ron will have more details elsewhere in this edition of "RF."

As most of you know, my first operating love is CW and I often think of writing a lil something on the subject. I noted an interesting writeup in the April issue of "The Chewed Rag," of the Hayward, California Radio Club. Allow me to indulge and quote from portions of it here.

"Among the stranger people around our CW ops.' A CW man is a person to watch with a very close eye. Contrary to popular belief, a CW opr is not crazy! A CW man has two brains: One perfectly normal brain which is destroyed during the process known as learning "The Code" and completely remade to process only "dits and dahs." The other brain is usually in a state of turmoil, like the remainder of the HAMS.

"Sitting at his position, a CW man receives an endless story of the world flowing through his stick or mind. The stuff that flows is such stuff as: Tks fb om es hpe to cuagn, hr rning abt a gal of hb dat cost abt 40 buxs to build es fb all the way, etc. Certain things are very much annoying to CW ops: XYL's yelling at harmonics, fone calls during fb QSO's, teenage harmonics listening to solid state devices spurting out "music," XYL's yelling-period, etc., etc., etc.

"Tfc net oprs are also very sensitive to such talk as DX contests, ratty QSO's on net frequencies, and watching the boob tube. When conversing with a net man never refer or try to point out your story without using numbers cuz all your efforts wl be replied with "what NR was it, who sent it and if it's a non-del, it didn't happen on my log."

"CW ops are found in all walks of life, they are usually harmless if fed often, given occasional loving, not interrupted during QSO's, and excused from lawn mowing during Field Day and Sweepstakes. The ideal XYL is found to be rich, know the code, and her Father a retired ship-board operator now selling Ham supplies. Another good prerequisite for XYL's is having a steady hand for the "third hand" when soldering and a good log "man" on Field Day. Do you know anyone like this? Try Ol Charlie Whiskey, you meet the nicest guys on CW!"



Vy 73, *Jerry* WA6ROF

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THIS MONTH'S MEETING

This month's meeting will again be held on the third Friday of the month at the regular spot. So, let's see everyone show up at 7:30 PM On Friday, July 18 at the Lincoln Savings & Loan Bldg. located at Seventeenth St and Bristol in Santa Ana. Our president, Jerry WA6RCF, tells me we will have a real fascinating movie entitled -- "THE COMMUNICATIONS EXPICSION". This movie is one of the "21<sup>st</sup> CENTURY" series of documentations and should prove to be quite entertaining. I hope we will see all the members there.

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FAMILY SOCIAL EVENT

A social event will be held on August 3 at 2:00 PM at the Atomic Energy Plant in San Onofre. It is located south of San Clemente, just off the Santa Ana Freeway. The program will last about 1½ hours. Afterwards, we will meet for a picnic at the Doheny State Beach. Don't forget that this is a family affair, so bring along the XYL and harmonics. If there are any questions please contact Ron Cade, WA6FIT.

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Minutes of Meeting - June 20, 1969

The meeting was called to order at 1945 hours by our President, Jerry WA6ROF. The officers of the club were introduced by Frank, WB6TBU. New members in the club are Glenn Wisniewski WB6YWQ, and Woody Hill WB6ZCO.

Ron WB6FIT, spoke about an outing planned for August 3rd. to the San Onofre Nuclear Power Plant, with swimming and a wiener roast afterwards. The majority of the members present were in favor of this outing, and it should be very interesting.

The future ham fest was discussed. Jack, WB6UDC, and Kay, W6NGO, are lining up some manufacturers for donations of ham gear to be raffled.

The remainder of the meeting was devoted to plans for Field Day.

Respectfully submitted

*Frank O'Leary*  
Frank O'Leary - WB6TBU  
Secretary

## USING INTEGRATED CIRCUITS

by  
W6HHC

This month I will attempt to acquaint you with some Integrated Circuits (IC's), how to use them, and what to be carefull of. Basically, an integrated circuit is any special purpose circuit that has been completely fabricated in a single package. For example, an audio amplifier circuit might be comprised of 14 transistors, one diode, and 15 resistors. If all these parts were "grown" on a single crystal "chip", this would be an IC. All you would have to do is connect the power supply, the microphone, and speaker.

THE OPERATIONAL AMPLIFIER

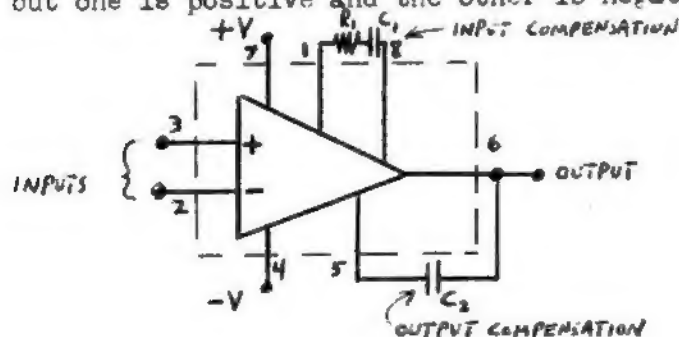
The  $\mu$ A709 amplifier (available from several manufacturers) is representative of the many generalpurpose "operational" amplifiers on the market today. It is inexpensive (costing about \$3 - \$5 each) and can be readily used by hams for experimentation or homebrew equipment.

The "operational" amplifier is a ultra-high audio amplifier capable of amplifying signals from DC to about one megacycle. The term "operational" means it can be connected in different modes to perform different functions. The list below shows just a few of the things you can do with these amplifiers:

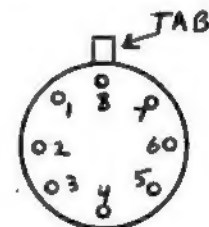
- 1) NON-INVERTING GAIN AMPLIFIER
- 2) INVERTING GAIN AMPLIFIER
- 3) DIFFERENTIAL AMPLIFIER
- 4) VOLTAGE FOLLOWER (non-inverting, unity gain amplifier)
- 5) INTEGRATOR
- 6) TRIGGER CIRCUIT
- 7) OSCILLATOR

USING THE "709"

The schematic and base diagram for a "709" IC are shown in FIGURE 1. The "709" requires two power supply voltages: both should be equal in magnitude, but one is positive and the other is negative. The power supplies can be from



SCHEMATIC DIAGRAM



(TOP VIEW)

BASE DIAGRAM (TC-5 can)

FIGURE 1

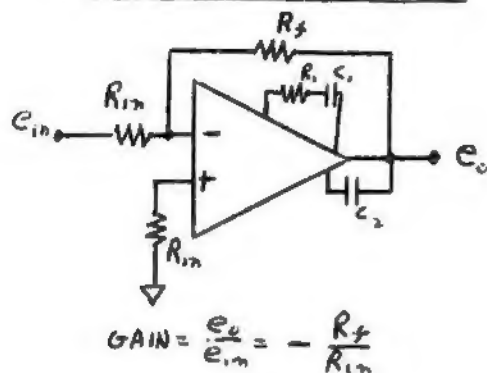
8 to 18VDC, depending on how much output voltage swing you need (the output voltage can swing positive and negative to about 80% of the supply voltage). The amplifier only dissipates about  $\frac{1}{4}$  watt by itself and can deliver about 8 ma of output current. The current is small because the circuit is mainly a volt-



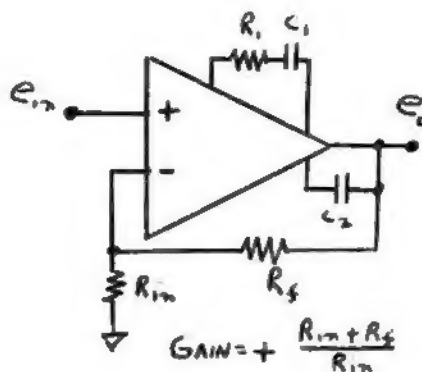
USING INTEGRATED CIRCUITS --continued

age amplifier; however, external transistors can be connected to boost the output current to well over one ampere. The "input compensation" and "output compensation" networks are necessary to prevent the amplifier from going into high frequency oscillations. The values of the compensation components depend on the gain of the circuit to be used. A table of values is given at the end of the article.

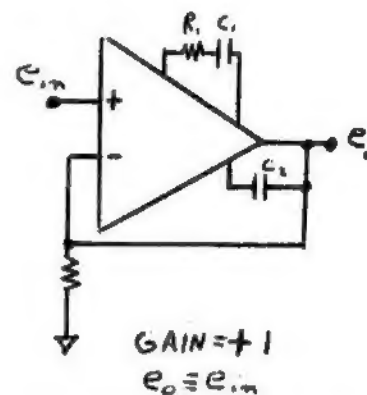
CIRCUITS USING THE "709"



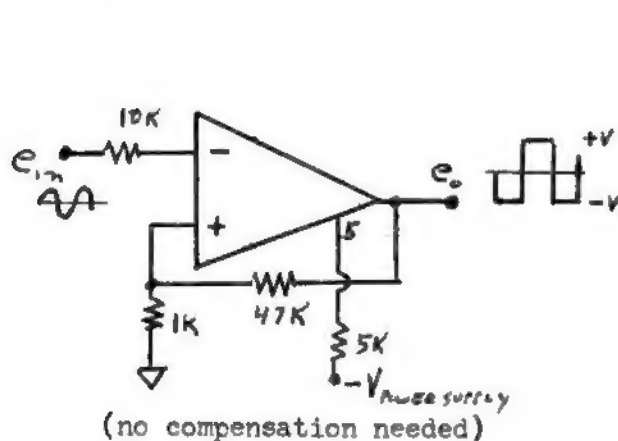
INVERTING GAIN AMPLIFIER



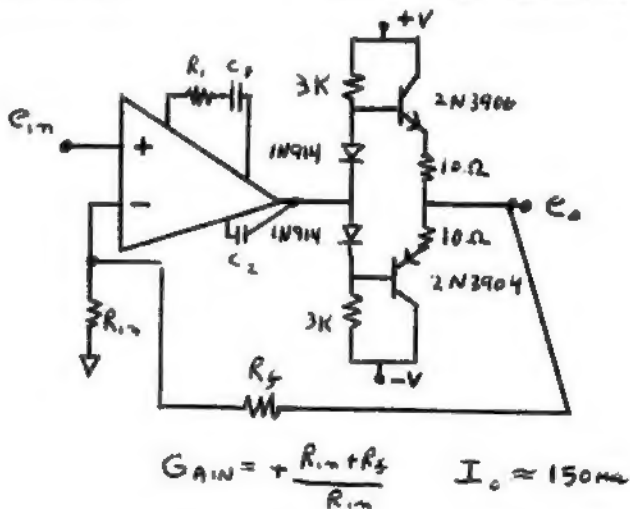
NON-INVERTING HI-7 GAIN AMPLIFIER



UNITY GAIN AMPLIFIER



SQUARING AMPLIFIER (TRIGGER CIRCUIT)



HIGH CURRENT BUFFERED AMPLIFIER

IMPORTANT NOTES

- 1) Generally, the input and feedback resistors ( $R_{in}$  and  $R_f$ ) can be any value between 100 and 200K .
- 2) Design your circuits so that the voltages appearing on either input terminal (pins 2 and 3) do not exceed 5 VOLTS peak.
- 3) To prevent oscillations of these circuits, compensation networks must be connected to the "709". The value of  $C_1$ ,  $R_1$ , and  $C_2$  depends on the Gain you use in your particular circuit. Below is a list of values for the compensation components:

GAIN	$C_1$	$R_1$	$C_2$
1	5000 pf	1.5K	300 pf
10	500 pf	1.5K	100 pf
30	330 pf	1.5K	68 pf
100	220 pf	1.5K	33 pf

## DX FROM ORANGE COUNTY

BY JACK, WB6UDC

Band conditions this month were pretty fair during the past month. Several DXpeditions were active also. Gus, W4BPD was active from two locations in the Indian Ocean. His first stop was VQ9/A/EC, Etoile Cay which is areef! The second stop was at VQ9/A/BC, Baudouse Cay which is also a reef! There are some question being raised as to whether these will be counted by the ARRL DXCC award group as acceptable countries. So we work,em and worry about that detail later!! The other DXpedition heard was T18NAM/TI9 Cocos Isle in the Pacific off the coast of Costa Rica. This one was a surprise! Additionally Sam, W6ZJA was on a business trip to the Netherland Antilles in the Caribbean off of the coast of South America. He operates under the call of PJ9HH and operated from the islands of Curecao, St Martin and Aruba. Sam was also there when the recent rioting broke out at the Shell Oil refinery and evidently was involved in some assist with his ham gear. Sam had what he called a "Grape smashing contest". He had large pile ups calling him and he made tape recordings of these and will play them at the Southern Cal DX Club meeting July 10. Some DX was worked on 40 meter phone also. These contacts are listed below. The first week of July had some excellent openings as late as midnite on 15 meters to Europe as you will see below. The most known of recent DXpeditions was the Navassa Isle show. These four gents from "4" land conducted a beautiful show and I doubt that any body who tried did not work them on any of the 5 bands. Let's take a look at other DX activities with contrbutions from WA6FIT, Ron and WA6DQR.

VP8KO	So. Orkney Isle	Les	28.550mhz	1640 GMT	
VP8KS	Falkland Isle	John	28.550	1729	
EA2HX	Spain	Marcel	21.285	1703	
K4IA/KC4	Navassa Isle		21.280	1438	
OX5BA	Greenland	Bert	14.332	0155	
SM0CER	Sweden	Jan	14.332	0038	
CX1JM	Uruguay	Hugo	28.600	1806	
GI3JIM	Ireland	Jim	14.221	0713	
VR6TC	Pitcairn Isle	Tom	21.352	2307	
5R8AS	Malagasy Rep.	Chet	14.225	0425	
SV0WMM	Greece	Paul	14.220	0451	
PJ9HH	Curacao	Sam	14.209	0455	See comments above
VP8JT	Argentine Isle	Dick	7.206	0536	Antartica
VP5AA	Turks	Ham	21.301	1836	
F08CW	Tahiti	Jean	14.055	0518	CW
VS5PH	Brunei	Eric	14.205	1214	
W3AWU/YB6	Sumatra	Al	14.206	1424	
VK9RY	Papua Terr.	Ron	14.205	1052	(this 352AM!!!!)
FB8ZZ	St Amsterdam Isle	Gilbert	14.203	1137	
CN8BB	Morocco	Roger	14.203	0633	
VK9KY	Cocos Isle	??	14.219	1449	
LI2B	Atlatic Ocean	Norman	14.208	0651	the drifting reed raft!
FK8AC	Neumea, N. Cal.	Felix	14.225	0749	
TF2WLW	Iceland	??	14.025	0422	CW
UA2WJ	Kalingrad	Pavel	14.240	0612	
AC5XD	Bhutan	Jaques	14.232	1444	
VQ9/A/EC	Etoile Cay	Gus	14.243	1442	
EA6BL	Balleiric Isle	Pete	21.278	1626	

DX FROM ORANGE COUNTY --- continued

K4IA/KC4	Navassa	Ernie	14.230	0116	
K4IA/KC4	"	Bob	7.204	0634	
K4IA/KC4	"	"	3.830	0731	
K4IA/KC4	"	??	14.026	1436	CW
CX7BY	Uruguay	Raul	7.220	0608	
LU5AH	Argentina	Martin	7.218	0647	
5A1TK	Lybia	Dave	14.215	0518	
TA2E	Turkey	Haci	21.030	1442	CW
VQ9/A/BC	Boudeuse Cay	Gus	21.300	1654	
F08BS	Tahiti	Henri	21.310	0658	
UW3KHI	Moscow	Alex	21.030	0707	CW
OH6OW	Finland	Jan	21.030	1419	CW
UO5PK	Moldavia	George	21.280	0437	
UV3FYJ	USSR	Bob	21.310	0448	
UA3WJ	USSR	Vladimir	21.300	0454	
YU1AG	Yugoslavia	George	21.305	0504	
UB5ND	Ukraine	Nicoli	21.285	0518	
UD6ED	Azerbaijan	Slava	21.280	0347	
OD5CN	Lebanon	Aref	21.295	0444	
TI8NAM/TT9	Cocos Isle	Nogy	14.204	0709	See comments above

So in reality the past month has not been really too bad DX wise. Incidentally I have recently purchased "The DX Handbook" by Don Miller W9WNV and regardless of what comments have and will be made about this author the book is excellent. Aside from how to work Dx, propagation and other info on QSLing he has quite a few useful tables in this book. I think almost any one no matter how long or how much DXing he has done can learn something from this book.

Have so award info but need more to publish. Hope this extra length of contacts made by the two contributors and the author have you interested in DX.

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Minutes of Board Meeting May 12, 1969

The meeting was held at the home of Jerry, WA6ROF. In attendance were W6GRP, WA6ROF, W6HHC, W6BNX, WB6WOO, WB6TBU, WB6CQR, WB6UDC, and W6NGO. We also had a visitor from Tokyo, Japan, JA1DOD, whose handle is Ryo. Ryo is a friend of W6NGO and is in the states to attend an RCA school in Indianapolis, Indiana.

Ken, W6HHC, was elected to be the Club Trustee, as it is necessary to have a trustee who holds an advanced or extra class license. Bill, WB6CQR, was instructed to write a check for \$4.00 to cover the license changeover.

The future ham fest was discussed, and it was decided that we would not conduct it in conjunction with any other club. A tentative date for this affair will probably be around the middle of September. Puclicity, raffles, food, prizes, location, and estimation of cost, were all discussed and will be discussed at our regular club meeting.

PRELIMINARY FIELD DAY RESULTS

<u>BAND</u>	<u>MODE</u>	<u>NO. OF QSO's</u>
20 MTRS	SSB	375
15 MTRS	SSB	301
40 MTRS	CW	213
2 MTRS	AM	169
75 MTRS	SSB	98
40 MTRS	SSB	50
20 MTRS	CW	16
15 MTRS	CW	4
80 MTRS	CW	3
		<u>TOTAL 1229 QSO's</u>

HAMADS\*\*\*\*\*HAMADS\*\*\*\*\*HAMADS

FOR SALE: HALICRAFTERS SX-111 reciever and HT-18 TRANSMITTER, BOTH FOR  
ONLY \$125.

CONTACT ROY TEBBETS --847-4390 WB6MCU  
5241 HEIL AVE.  
HUNTINGTON BEACH 92647

for sale: COLLINS 75A-3 WITH SPKR AND 3.1 KC MECH. FILT. --\$190  
75A-4 with SPKR AND 3.1 KC FILT. --\$300  
200-V -- \$275 contact JIM GILBEATH WA6BRG  
600-L -- \$175 7266 COURTFY DR.  
SAN DIEGO, CAL. 92111

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